THE PLANT DISEASE REPORTER

Issued by

THE PLANT DISEASE SURVEY, DIVISION OF MYCOLOGY AND DISEASE SURVEY
BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING
AGRICULTURAL RESEARCH ADMINISTRATION
UNITED STATES DEPARTMENT OF AGRICULTURE

Volume XXIX June 15, 1945 Number 20

The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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Potato late blight has appeared in threatening amounts in Kansas, where the only previous known occurrence was a mere trace 10 years ago, according to L. E. Melchers, page 513. George Gyrisko, page 513, reports spread on Long Island.

George E. Altstatt, page 514, reports that abundance of psyllids on volunteer potatoes in the Texas Panhandle may lead to an outbreak of psyllid yellows in potato fields.

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Anthracnose is very severe on sycamore in Illinois this year, according to J. C. Carter, page 535; it is reported as prevalent in Pennsylvania and Missouri also.

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CHECK LIST REVISION

Freeman Weiss

SCHEDONNARDUS (GRAMINEAE)

SCHEDONNARDUS PANICULATUS (Nutt.) Trel., TUMBLEGRASS. Low perennial of prairies and plains from Ill. to Mont. and N. Mex.; of minor forage value when young.

Puccinia schedonnardi Kell. & Swing. (II,III), rust. Colo., Kans., Nebr., N. & S. Dak. O and I on Malvaceae

SCHIZACHNE (GRAMINEAE)

SCHIZACHNE PURPURASCENS (Torr.) Swallen, FALSE MELIC. Tallish perennial of woodlands ranging from Me. to Ky. and the Dakotas, and in the mountains from Mont. to N. Mex.; of food value to wildlife.

Colletotrichum graminicolum (Ces.) G. W. Wils., anthracnose. Minn., Wis.
Hendersonia sp., leaf rot. Minn.
Phyllachora graminis (Pers. ex Fr.) Fckl., tar spot. N. Y., Wis.
Phyllosticta sp., leaf spot. Minn.
Puccinia coronata Cda. (II,III), crown rust. Wis.

SCIRPUS (CYPERACEAE)

SCIRPUS SPP., BULRUSH. Tall perennial sedges (a few spp. dwarf and annual), occurring in shallow water, marshes, or bogs, throughout temperate N. America. Important food plants of avian and mammalian wildlife, some are used in matting and for packing material. Representative spp. are: S. AMERICANUS Pers., CHAIR-MAKER'S RUSH, in marshes throughout the U.S.; S. ATROVIRENS Muhl., in the East and South; S. FLUVIATILIS (Torr.) A. Gray, RIVER BULRUSH, in shallow water in the Northeast and Central States; S. ROBUSTUS Pursh, SALTMARSH BULRUSH, in salt marshes near the Atlantic and Gulf Coasts; S. VALIDUS Vahl, AMERICAN GREAT B., in shallow water throughout the interior, and S. ACUTUS Muhl., TULE, similar but more western, extending to the Pacific Coast.

Arthrinium cuspidatum (Cke. & Harkn.) Hoehn., on culms. Calif.
Cercosporella scirpina J. J. Davis, on leaves. Wis. On S. cyperinus.
Cintractia caricis (Pers.) Magn., seed smut. Mich.. On S. caespitosus L.
Clasterosporium caricinum Schw., leaf spot. Minn. On S. acutus.
Helminthosporium sp., leaf spot. Minn. On S. fluviatilis.
Hendersonia scirpicola Cke. & Harkn., on culms. Calif.
Hypoderma scirpinum DC., on dead culms. Calif., Miss., Nebr., N. Y., N. Dak., Wash.
Leptosphaeria juncicola Rehm, on leaves. Alaska.
(Leptostroma scirpinum Fr.): Hypoderma scirpinum
Leptostromella scirpina Pk., on leaves, ? leaf spot. Nebr., N. Y.

SCIRPUS SPP. cont.

Meliola argentina Speg., black mildew. Hawaii, P. R.

Pestalotia scirpina Ell. & Mart., on culms. Fla., Md., La.

Phaeosphaerella scirpicicola Earle, on leaf tips. Calif.

Puccinia angustata Pk. var. typica Arth. (II,III), rust. Throughout the U.S. east of the Rocky Mountains and on the Pacific Coast on S. americanus, S. atrovirens, S. californicus (C.A.Mey.) Britt., S. cyperinus (L.) Kunth., S. fluviatilis, and others. O and I on Labiatae, especially Lycopus and Mentha.

P. macclatchieana Diet. & Holw. (II,III), rust. On S. microcarpus Presl, occasionally, from New England to Colo., Calif. and Wash. O and I unknown. The original spelling was McClatchieana.

P. obtecta Pk. (II,III), rust. On S. americanus, S. acutus, S. californicus, S. olneyi A. Gray, S. validus, from Mass. to Va., Calif. and Oreg. O and I on Bidens spp.

P. scirpi DC. (II,III), rust. On S. validus in P. R. O and I on Nymphoides grayanum (Griseb.) Arth.

Septoria narvisiana Sacc., on culms of S. robustus. Del.

S. peckii Sacc. (Cryptosporium scirpi Pk.), on leaves and leaf sheaths of S. fluviatilis. N. Y. Has also been placed in Rhabdospora.

Stagonospora scirpi Tehon, on leaves and sheaths of S. atrovirens. Ill.

S. scirpina Ell. & Ev., leaf and culm spot, on S. olneyi in La. A nomen nudum.

Synchytrium scirpi J. J. Davis, on leaves of S. atrovirens. Wis.

Tetraploa scabra Harkn., on stems. Calif.

Uromyces americanus Speg. emend. Cumm. (II,III), rust. On S. americanus in Ala., Del., Tex., and probably elsewhere; on S. californicus in Calif.; on S. validus in Ind., Nebr., Wis., and probably elsewhere. O and I unknown.

U. scirpi (Cast.) Burr. (II,III), rust. On S. fluviatilis, S. paludosus A. Nels., S. robustus, and others, widely distributed in the U.S., also in Hawaii and P. R.; formerly reported on S. americanus, S. californicus, and S. validus, but these records should probably be assigned to U. americanus. O and I on Umbelliferae.

Xenogloea eriophori (Bres.) Syd., on stems of S. atrovirens in Wis.

SCLERIA (CYPERACEAE)

SCLERIA SPP., NUT-RUSH, RAZORSEDGE. Perennial sedges of moist meadows or dry woodlands, chiefly in the Eastern and Southern States and in tropical America; of food value to wildlife.

Meliola argentina Speg., black mildew. P. R.

Phyllachora scleriae Rehm (Sphaerodothis scleriae (Rehm) F.L.Stevens), tar spot. Canal Zone, P. R., Virgin Is.

P. scleriicola Miles. Miss.

Puccinia scleriae (Paz.) Arth. (II,III), rust. Canal Zone, P. R., Virgin Is. O and I on Passiflora rubra L.

P. scleriicola Arth. (II,III), rust. Fla., Ga., Ill., P. R. O and I unknown

Uromyces scleriae P. Henn. (II,III), rust. P. R. O and I unknown

SCLEROPOGON (GRAMINEAE)

SCLEROPOGON BREVIFOLIUS Phil., BURRO GRASS. Perennial of arid plains of the Southwestern States, of some forage value when young, and useful in controlling erosion.

Puccinia aristidae Tracy (II,III), rust. N. Mex. O and I on plants of various families.

SECALE (GRAMINEAE)

SECALE CEREALE L., RYE. Cult. as a cereal and soiling crop throughout the U.S. except the far South and Southwest, especially in the Middle Atlantic and Lakes States; sometimes escaped and naturalized.

Alternaria sp. and A. tenuis Nees ex Wiltshire, on glumes associated with or simulating black-chaff disease, also secondary leaf spot. Del., Md., N. J., N. Dak.

Anguina tritici (Steinb.) Filip., leaf and spike distortion, "cockles". Ill., Va., N. & S.Car.

Ascochyta graminicola Sacc., leaf spot. Ill.

Cercosporella herpotrichoides Fron, foot rot. Ida., Oreg., Wash.

Cladosporium herbarum Pers. ex Lk., mold of glumes and leaves associated with or simulating black-chaff disease. Md., Tenn.; probably cosmopolitan. Conidial stage of Mycosphaerella tulasnei Jacz.

Claviceps purpurea (Fr.) Tul., ergot. General

Colletotrichum graminicolum (Ces.) G.W.Wils., anthracnose. Eastern States (except New England), Southern and Central States to Tex. and N. Dak.

Ditylenchus dipsaci (Kuehn) Filip., leaf and stem nematode. Kans.

Erysiphe graminis DC., powdery mildew. General. Usually designated f. sp. secalis El. Marchal, which is restricted to Secale spp.

Fusarium avenaceum (Fr.) Sacc., head mold, following ergot or scab. Ind., Ohio

F. culmorum (W.G.Sm.) Sacc., seedling blight, foot rot, ? head blight or scab. Conn. to Va., Ark. and N. Dak.; also Pacific Coast. A var. cereale (Cke.) Wr., prevalent on cereals, has been distinguished.

F. equiseti (Cda.) Sacc., secondary root rot. N. Dak.

(F. graminearum Schwabe): Gibberella zeae

F. heterosporum Nees, head mold, often following ergot. Ill.

F. scirpi C.R.Lambert & Fautr. var. acuminatum (Ell. & Ev.) Wr., secondary root rot. N. Dak., Oreg.

Gibberella zeae (Schw.) Petch, seedling blight, foot rot, scab. N. Y. to N. Car., Mo. and Minn.; Calif.

Helminthosporium sativum Pam. King & Bakke, root rot, leaf blotch. N. Y. to N. Car., Nebr. and N. Dak.; ? Calif.

? H. tritici-repentis Died. (= Pyrenophora tritici-repentis (Died.) Drechs.), on leaves. W. Va.

H. tuberosum Atk., on dead culms. Ala., Del.

Leptosphaeria herpotrichoides DeNot., on dead culms. N. Dak.

Lophodermium arundinaceum (Schrad. ex Fr.) Chev. var. culmigenum (Fr.) Fckl., on dead culms. N. Y.

SECALE CEREALE cont.

Macrophoma secalina Tehon, on leaves and culms, ? leaf blight. Ill.

Marasmius tritici P.A.Young (? M. scorodonius Fr.), on roots and base of culms. Ill.

Mycosphaerella sp., on culms. Ohio.

Naucoria cerealis Boewe, on roots and base of culms. Ill.

Nectria secalina Ell. & Ev., on dead culms. Ala.

Ophiobolus graminis Sacc., take-all. N. Y., Okla.

Pratylenchus pratensis (De Man) Filip., in roots. Va.

Pseudomonas coronafaciens (Elliott) Stapp, halo blight. Wash.

Puccinia glumarum (Schm.) Eriks. & Henn. (II,III), stripe rust. Ida., Oreg., Wash.

P. graminis Pers. (II,III), stem rust. General. The var. secalis Eriks. & Henn. commonly infects rye in nature; natural infection with the var. tritici Eriks. & Henn. also has been reported.

P. rubigo-vera (DC.) Wint. (P. dispersa Eriks. & Henn.) (II,III), leaf rust. General. The var. (f. sp.) secalis (Eriks.) Carleton with I on Lycopsis (Anchusa) spp., is the only one reported on rye.

Pyrenophora relicina (Fr.) Fckl., on leaves. Ga.

P. trichostoma (Fr.) Fckl., on dead culms. Pa.

Pythium spp., root browning, root necrosis, damping-off. Specifically identified are: P. arrhenomanes Drechs. in Mo. and N. Dak., ? Va.; P. debaryanum Hesse in N. Dak.

Rhizoctonia solani Kuehn, root and stem rot. Miss.

Rhynchosporium secalis (Oud.) J.J.Davis, scald. Calif., Ill., Oreg., Wash., Wis.

Scolecotrichum graminis Fckl., brown stripe. Oreg., S. Car.

Selenophoma donacis (Pass.) Sprague & A. G. Johns. var., speckle. N. Dak.

Septoria nodorum Berk., glume blotch. Ark., Ind., Md., Ohio, Wis.

S. secalis Prill. & Del., on leaves and leaf sheaths, leaf blotch. Va. to Ala., Tex. and Minn.

Tilletia caries (DC.) Tul. (T. secalis (Cda.) Kuehn), rough-spored bunt. Calif., N. Y., Oreg., Wash.

T. foetida (Wallr.) Liro (T. levis Kuehn), smooth-spored bunt. Calif., Kans., Mich., Wash.

Urocystis occulta (Wallr.) Rab., flag smut. Mass. to Ala., Tex., Colo. and N. Dak.; general east of the Rocky Mountians.

Ustilago hordei (Pers.) Lagerh., covered smut. Wash.

U. tritici (Pers.) Rostr., loose smut. Occasional in the Eastern and Central States (Mass. to Va., Okla. and N. Dak.); some reports as Ustilago sp. may involve U. hordei.

Wojnowicia graminis (McAlp.) Sacc. & D. Sacc., secondary root rot. Oreg., Wash.

Xanthomonas translucens (L.R.Jones, A.G.Johns. & Reddy) Dowson f. sp. secalis (Reddy, Godkin & A.G.Johns.) Hagb., bacterial blight. Ind. to Iowa, N. Dak. & Wis.; Ariz., Calif. Unidentified bacterial disease reported also in Colo., Ida., Kans., Wash.; ? Md.

X. translucens f. sp. undulosa (E.F.Sm., L.R.Jones & Reddy) Hagb., black chaff. Wis.

Mosaic — Marmor tritici Holmes (Triticum virus 1 K.M.Sm.). Ill., Va. This virus has been more specifically identified as M. t. var. typicum McKinney and the disease as mosaic-rosette.

SECALE MONTANUM Guss. (1). Perennial of southwestern Asia, hypothetical ancestor of cult. rye; grown in cereal breeding plots. Also S. secale x montanum hybrids (2)

Claviceps purpurea (Fr.) Tul., ergot. N. Dak., Wash. (2)
Puccinia glumarum (Schm.) Eriks. & Henn. (II,III), stripe rust. Wash. (1)
P. rubigo-vera (DC.) Wint. var. secalis (Eriks.) Carleton (II,III), leaf rust. Wash. (1,2)
Pythium debarynum Hesse, damping-off. N. Dak.
Rhynchosporium secalis (Oud.) J.J.Davis, scald. Wash. (1)
Scolecotrichum graminis Fckl., brown stripe. Wash. (1)
Ustilago hypodytes (Schlecht.) Fr., stem smut. Wash. (2)

Bends -- cause unknown. Wash. (2)

SETARIA (GRAMINEAE)

SETARIA GENICULATA (Lam.) Beauv., KNOTROOT BRISTLEGRASS (1). Perennial of moist habitats in waste ground and cultivated fields commonly near the coast from Mass. to Tex. and Calif., inland to Ill. and Kans. S. LUTESCENS (Weigel) F.T.Hubb (S. glauca of authors), YELLOW BRISTLEGRASS, PIGEON GRASS (2). Annual, introduced from Europe and widely established in waste ground and a weed in cultivated fields, east of the Great Plains, also in the Pacific Coast States. Both spp. of food value to wildlife. S. VERTICILLATA (L.) Beauv., BUR B. (3), an introduced annual of range similar to (2) is a troublesome weed.

Cercospora setariae Atk., leaf spot. Ala., Ky., N. Dak.; ? Iowa, N. Y. (2)
C. setariicola Tehon & Daniels. Ill., Mich., Wis. (2)
Epichloë typhina (Pers. ex Fr.) Tul., choke. N. Car. (1 or 2?)
Gibberella zeae (Schw.) Petch, foot rot, head blight. Ind. to Iowa and Wis. (2)
Helminthosporium sp., leaf spot. Tex. (1), Minn. (2)
H. sativum Pam. King & Bakke, root rot. Ky., N. Dak. (2)
Heterodera marioni (Cornu) Goodey, rootknot. Hawaii (3)
Melasmia setariae Atk., Ala.; S. Car. (1).
Ophiobolus acuminatus (Sow. ex Fr.) Duby, on dead culms. Ga. (2)
O. graminis Sacc., culm rot. Ark. (1)
Piricularia grisea (Cke.) Sacc., grey leaf spot. Vt. to Va., Ky. and Wis. (2).
Pseudomonas alboprecipitans Rosen, bacterial spot. Ark., ? N. Y., Pa., Va. (2). Also on (1) by artificial inoculation.
P. syringae van Hall (P. holci Kendr.), bacterial spot. Iowa (2)
Puccinia setariae Diet. & Holw. (II,III), rust. La. (1). O and I unknown.
P. substriata Ell. & Barth. (II,III), rust. Fla., Canal Zone, P. R. (1); Tex. (2). Has been confused in the II stage with P. chaetochloae Arth., to which some of the reported collections on (1) may belong.
Rhopographus clavisporus (Cke. & Pk.) Sacc., on dead culms. Ga. (2).

SETARIA GENICULATA etc. cont.

Sclerospora graminicola (Sacc.) Schroet., downy mildew. Iowa, N. Y., Wis. (2)

Sporotrichum peribebuyense Speg., leaf blister. Ill., Okla. (2)

Ustilago neglecta Niessl, head smut. General (2)

Sphacelotheca pamparum (Speg.) Clint. (? S. magnusiana (Fisch. Waldh.) Cif.), seed smut. Wis. (2)

Bends (hairpin) -- cause unknown. Mich. (2)

Mosaic -- Marmor sacchari Holmes (Saccharum virus 1 K.M.Sm.)? Hawaii (3).

SETARIA ITALICA (L.) Beauv., FOXTAIL MILLET; also, in different vars., GOLDEN, GERMAN, HUNGARIAN, ITALIAN, and SIBERIAN M. (1). Eurasian annual, cult. since antiquity as a cereal; in the U.S. grown chiefly for hay and green feed, especially in the Central States and southward; occasionally naturalized in waste ground. S. MAGNA Griseb., GIANT BRISTLEGRASS (2). Robust annual of marshes and wet habitats near the coast from N. J. to Fla. and Tex. S. VIRIDIS (L.) Beauv., GREEN B., PIGEON GRASS (3). European annual widely established in waste ground, and a weed in cultivated fields throughout the U.S. except the South and at high altitudes. All are of food value to wildlife.

Cladosporium herbarum Pers. ex Lk., leaf and head mold. Cosmopolitan (1).

Claviceps purpurea (Fr.) Tul., ergot. N. Mex. (3)

Curvularia geniculata (Tracy & Earle) Boed., secondary root rot. Minn., N. Dak. (3)

Epicoccum purpurascens Ehrh., leaf mold. Oreg. (1)

Fusarium spp., secondary root rot. N. Dak. (1,3). The following spp. reported: F. equiseti (Cda.) Sacc., F. moniliforme Sheldon, F. oxysporum Schlecht. em. Snyder & Hansen, F. scirpi C.R.Lambert & Fautry var. acuminatum (Ell. & Ev.) Wr., F. solani (Mart.) App. & Wr. em. Snyder & Hansen.

Helminthosporium sp., leaf spot. Minn., Mo.

H. halodes Drechs., H. monoceras Drechs., secondary root rot. N. Dak. (3)

H. sativum Pam. King & Bakke, root rot. Minn., N. Dak. (1,3).

H. setariae Saw., leaf spot. Md., N. J. (1); N. Dak. (3). The ascigerous stage, Ophiobolus setariae S.Ito & Kuribay., has not been reported here.

H. turcicum Pass., secondary root rot. S. Dak. (3)

Heterodera marioni (Cornu) Goodey, rootknot. Reported on (1) without locality; Ky. (3)

Phoma terrestris Hansen, secondary root rot. Iowa (1), N. Dak. (1,3)

Phyllosticta sorghina Sacc., leaf spot. N. Dak. (3)

Piricularia grisea (Cke.) Sacc., gray leaf spot. Mass. to Ala., Tex. and Wis. (1); W. Va. to Ind., Kans. and N. Dak. (3). The form occurring on Setaria has been reported also as P. setariae Nishikado

Pratylenchus pratensis (De Man) Filip., in roots. Ky. (3)

Pseudomonas alboprecipitans Rosen, bacterial spot. Ark., ? Mont. (1)

P. syringae van Hall (P. holci Kendr.), bacterial spot. Minn. (1), N. Dak. (1,3), Oreg. (3)

SETARIA ITALICA etc. cont.

Pythium arrhenomanes Drechs., root browning. Minn., N. & S. Dak. (1,3)
P. debaryanum Hesse, damping-off. Minn., N. & S. Dak. (1,3).
Rhizoctonia solani Kuehn, secondary root rot. N. Dak. (3)
Sclerospora graminicola (Sacc.) Schroet., downy mildew. N.Y. to Miss., Kans. and Mont., Hawaii (1); Fla. (2); N.Y. to N.Mex. and Mont. (3).
Septoria sp. (reported as graminum Desm.), leaf spot. Wis. (3)
Tylenchus spiralis Cassidy, in roots. Hawaii (1)
Ustilago crameri Koern., head smut. General (1).
Ustilaginoidea setariae Bref., false smut. La. (2)

Mosaic -- Marmor sacchari Holmes (Saccharum virus 2 K.M.Sm.). Fla. (2). Undetermined virus. Hawaii (1)

SETARIA MACROSTACHYA H.B.K., PLAINS BRISTLEGRASS (1), and S. SCHEELEI (Steud.) Hitchc. (2). Perennials of dry plains and open woodlands, Colo. to Tex. and Ariz.; of some forage value when young. S. SETOSA (Swartz) Beauv. (3) is similar, it occurs throughout the West Indies and in Central America.

Angiopsora cameliae (Mayor) Mains (II,III), rust. Tex.(1,2), P.R. (3)
Claviceps purpurea (Fr.) Tul., ergot. N. Mex. (1)
C. ranunculoides Möller, Ariz. (1)
Helminthosporium sp., leaf spot. Tex. (1)
Phyllachora cornispora Atk., tar spot. Canal Zone (3)

SITANION (GRAMINEAE)

SITANION HYSTRIX (Nutt.) J.G.Smith, SQUIRREL-TAIL. Perennial of dry plains and open woods from S.Dak. to Mo., Tex. and Calif.; of some forage value before the spikes form but then becoming irritating and injurious to grazing animals. S. HANSENI (Scribn.) J.G.Smith (2) and S. JUBATUM J.G.Smith (3) occur in similar habitats from Utah to Calif. and Wash.

Ascochyta graminicola Sacc. var. holci Sacc., leaf spot. Oreg. (1)
Bacterium agropyri (O'Gara) Stapp, bacterial slime spot. Wash. (3)
Gercosporella herpotrichoides Fron, foot rot. Ida. (1)
Claviceps purpurea (Fr.) Tul., ergot. Oreg. (1)
Dilophospora alopecuri Fr., twist. Wash. (1,3)
Puccinia glumarum (Schm.) Eriks. & Henn. (II,III), stripe rust. Calif., Oreg. (1,2,3); Colo., Wyo. (1); Wash. (1,3)
P. graminis Pers. (II,III), stem rust. Colo., N.Mex., Utah, Wash. (1); Ida. (3), Mich. (1,3)
P. montanensis Ell. (II,III), brown stripe rust. Colo., Mont., Utah (1). O and I on Berberis fendleri A.Gray
P. pattersoniana Arth. (II,III), leaf rust. Calif. (2,3); Ida. Oreg. (1); Wash. (3). O and I on Brodiaea douglasii S. Wats.
P. rubigo-vera (DC.) Wint. (II,III), leaf rust. Ariz., Calif., Colo., Ida., N.Mex., Wyo. (1); Mich., Oreg., Utah, Wash. (1,3). The vars. agropyri (Ell. & Ev.) Arth. with O and I on Ranunculaceae,

SITANION conc.

and apocrypta (Ell. & Tr.) Arth. with O and I on Boraginaceae and Hydrophyllaceae, have been identified.

Scolecotrichum graminis Fckl., brown stripe. Calif. (2), Mont. (1), Oreg.(1,3), Wash. (3)

Selenophoma sp. Calif. (1,2); Ida., Mont., Utah (1)

S. donacis (Pass.) Sprague & A.G.Johns. var., stem speckle. Mont., Oreg., Utah(1)

Septoria passerinii Sacc., leaf blotch. Oreg. (1)

Urocystis agropyri (Preuss) Schroet., flag smut. Wash. (3)

Ustilago bullata Berk. (U. lorentziana Thuem.), head smut. Utah, Wash. (1)

U. hypodytes (Schlecht.) Fr., stem smut. Calif., N.Mex., Utah (1), Wash. (1,3)

U. sitanii G.W.Fisch., loose smut. Oreg. (2), Wash. (1,2,3)

U. striaeformis (West.) Niessl, stripe smut. Calif. (1), Utah (2)

DIVISION OF MYCOLOGY AND DISEASE SURVEY

LATE BLIGHT OF POTATO EPIDEMIC IN KANSAS

L. E. Melchers

Late blight (Phytophthora infestans) made its appearance in what appears to become an epidemic, for the first time in the history of potato production in Kansas. The only other time that late blight was noted in Kansas was as a mere trace in 1935.

Because of the backward spring with prolonged wet periods and unprecedented cool weather, primary infections began to crop out in commercial potato fields and in some of the Victory gardens on or about June 4 (estimated date). It was not observed in any fields until a week or 10 days after this date, but it must have been present about June 4.

At this writing, it is not known to what extent it will spread or how much loss will occur. Fields were visited with John O. Miller, extension plant pathologist, where infection centers had spread to considerable extent and the stems were already showing lesions. Potato growers were not equipped to spray with Bordeaux and as a result those that attempted control measures used copper dusts. Frequent rains have washed these off so that the control is problematical. At this time of year warm dry weather should prevail and this will do more to check the present start than anything else. A later report will follow as to the probable damage from late blight in Kansas.

KANSAS STATE COLLEGE, MANHATTAN

LATE BLIGHT ON LONG ISLAND

George Gyrisko, in the New York State College of Agriculture Weekly News Letter, reports late blight, as well as early blight (Alternaria solani), from the North Fork of Suffolk County. He states in the June 4 issue that,

"Late blight was located in one field at Wading River in quite serious

proportions. It was also found on Green Mountain and Cobbler at Orient and Orient Point. Here infection was spotty and light but quite generally distributed.

"Early blight was found near Mattituck in one field, but it was found on only one plant and cannot be considered serious."

On June 6 he reported, as quoted in the June 11 issue,

"Late blight is present throughout the North Fork in dangerous proportions from Orient to Wading River. Blighted areas 10 feet across are present in some fields and early or late blight can be found in most fields. As a whole, growers were too late in applying their fungicide, in spite of repeated warnings from extension, research, and farm bureau workers. Rainy, cold weather has provided ideal conditions for maintenance and spread of blight, resulting in a critical epiphytotic condition. Repeated applications of fungicide are absolutely necessary if the disease is to be checked."

POTENTIAL PSYLLID YELLOWS OF POTATO IN THE TEXAS PANHANDLE

George E. Altstatt

During the first week of May, Mr. E. T. Hibbs, entomologist in charge of the Truck Crop Insect Investigations Laboratory at Alta Loma, joined me in a survey of potatoes in the Lubbock-Hereford area in the Texas Panhandle. At this time, potatoes were only about 3 inches high in the Lubbock area, and many fields were still to be planted in the Hereford area. Volunteer potatoes, left from last season's crop, however, were 5 to 7 inches high, depending on location.

It was found that adult Psyllids and eggs were present in volunteer potatoes growing in widely scattered locations. The numbers of adults averaged from 1 to 4 per hundred sweeps of a 10-inch net. No Psyllids were taken from volunteer potatoes, or from new fields of potatoes where the plants were under 4 inches in height.

From volunteer potatoes growing in cull dumps behind a storage house in the Hereford area, an average of 62 adult Psyllids were taken in 100 sweeps.

The presence of the adult Psyllids at this early date indicates the possibility of a heavy infestation later in the season, and the danger of damage due to Psyllid yellows. The attention of the county agents and potato growers has been called to the possibility of Psyllid yellows and to the sources of infestation so that preventive and control measures may be undertaken promptly.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

BACTERIAL RINGROT IN POTATO TABLE STOCK TO BE USED FOR SEED IN OTSEGO COUNTY, MICHIGAN

Alvin J. Braun

On May 31 and June 1 and 2 a second visit was made to the farm storages of potato growers in Otsego County. Information on the condition of the

stock to be used for planting a considerable portion of the 1945 acreage in this county was obtained. Other pertinent information recorded was planting date, source of seed, grade, whether seed was planted cut or whole, type of storage, disinfectants (if any) used on equipment, seed treatment (if any), and miscellaneous notations such as whether or not seed left farm, whether planter had been used on another lot of seed, etc. The main objective was to obtain information which might be of value in determining the source of bacterial ringrot (Corynebacterium sepedonicum) infection in the plantings where the disease may develop during the 1945 growing season. Examination was made of the cut seed of many of the lots in which no ringrot was found during the March survey (PDR, Mar. 22, p. 259). No ringrot was detected in any of the lots previously declared free from it. Information was obtained on 39 lots of seed on 22 farms.

Five lots of seed known to contain a trace to 1% of severely affected ringrotted tubers will be planted despite the advice given by the county agricultural agent. In addition, 4 lots of seed in which no ringrot was detected but which were exposed to ringrot-affected stock, will be planted. Observations to be made on these lots at harvest time and later in storage will be of value in ascertaining the probable hazard of using such stock for planting purposes. Likewise, further information will be obtained on the efficiency of sanitation in controlling ringrot where clean seed is being planted on 6 farms where the disease was present in 1944.

If serious losses from ringrot occur in those plantings where it is known that infected seed were planted, the gravity of the situation and the need for obtaining disease-free seed would be adequately and effectively demonstrated to the table-stock growers in this area, especially to those who disregarded the suggestion to change seed because of ringrot. If no appreciable loss occurs the knowledge that under certain conditions a trace of ringrot in the planting stock may not be too objectionable might be of some value in making recommendations in unusual cases in the future.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

BACTERIAL RINGROT AND OTHER DISEASES IN POTATO SEED STOCKS IN WISCONSIN

Edwin E. Honey

During the period from April 11 to May 26 inspections were made in 12 townships of Langlade County, chiefly of potato seed stocks about to be planted. Over 200 locations were inspected. Also, a few locations were examined in adjacent townships in the northeastern portion of Marathon County and the southwestern portion of Forest County.

Because of the prevalence of bacterial ringrot, special attention was given to the occurrence and control of this disease.

Cold, dry weather with nightly frosts characterized the weather during the last half of April and the first half of May. The season, which in March had started far in advance of normal, was slowed up by the continued cold dry weather. A much-needed rain was received in this area on May 20, followed by rainy and somewhat warmer weather for about a week.

The planting of potatoes was still in progress in Langlade County on

Table 1. Comparison of the incidence of bacterial ringrot of potatoes in the Langlade County area, Wisconsin, 1944 and 1945

Township	Survey May 1944: Total number of locations examined	Survey May 1944: Percentage of locations known to have ringrot	Survey April-May 1945: Total number of locations examined	Survey April-May 1945: Percentage of locations known to have ringrot
		Langlade County		
Ackley	21	61.9	28	71.4
Ainsworth	None	None	5	40.0
Antigo	27	60.0	31	38.7
Elcho	None	None	5	0
Langlade	7	14.3	7	14.3
Neva	15	66.7	27	55.6
Norwood	4	25.0	4	25.0
Peck	6	83.4	7	28.6
Polar	3	33.3	12	75.0
Price	17	70.6	19	57.9
Rolling	16	56.5	23	52.1
Wolf River	9	66.7	11	27.2
Totals and averages	124	60.0*	179	49.2
		Forest County		
Nashville	None	None	2	50.0
		Marathon County		
Harrison	None	None	10	90.0
Totals for area	124	60.0*	191	51.3

* 30% reported by growers

Table 2. Comparison of the incidence of bacterial ringrot in infected potato varieties examined in 1944 and 1945

Variety	Survey May 1944: Number infected stocks examined	Survey May 1944: Percentage of total examined infected stocks	Survey April-May 1945: Number infected stocks examined	Survey April-May 1945: Percentage of total examined infected stocks
Cobbler	15	18.3	15	11.2
Triumph	3	3.6	7	5.2
Chippewa	23	28.1	39	29.1
Katahdin	23	28.1	26	19.4
Russet Rural	2	2.4	13	9.7
Rural New Yorker	7	8.5	13	9.7
Sebago	9	11.0	21	15.7
Total infected stocks	82	100.0	134	100.0

May 25. Much planting had been delayed because of the inability to obtain fertilizer which no doubt will reduce somewhat the potato acreage in this area.

Bacterial Ringrot. As in 1944, so in the April-May survey of 1945 a very high incidence of bacterial ringrot was found in the Langlade County area. Summaries in Table 1 give results of examination of 191 locations in 1945 as compared with 124 locations examined in 1944.

According to the 1945 survey, ringrot was present in from slight to severe amounts in 98 cases or 51.3%. This showed a somewhat lower percentage of locations harboring ringrot than last year, when ringrot was found in 60% of the 124 cases examined. However, both of these percentages must be regarded as very conservative because, especially toward the end of the surveys, some seed stocks had been planted or disposed of so that it was not possible to examine them. Furthermore, in 1945 there were no surplus stocks available for examination as in the spring of 1944 when this surplus was being bought and shipped in gondola cars for dehydration. Thus, it is apparent that ringrot was present in the amounts given or more in the respective crops.

Some growers finding, at digging time, a high percentage of ringrot in the field disposed of such stocks immediately. How successful they have been in eliminating bacterial ringrot and preventing contamination of other stocks they may have harvested with the same equipment remains to be seen at the next harvest. Obtaining ringrot-free seed and storing it in the same cellar in bins adjacent to ringrot-affected tubers or within bins previously containing ringrot, without disinfection, was found to be practiced. Such procedure is almost certain to lead to some contamination of otherwise clean seed.

About 11 growers visited in Langlade County last year were found to have discontinued growing potatoes this year. A common reason given for this change was the presence of ringrot coupled with decision to increase the dairy herd. Two growers gave ringrot plus inability to secure fertilizer as the reason; however, in most cases, the shortage of fertilizer merely reduced potato acreage rather than caused complete discontinuance of the crop with any one grower.

The danger of introducing the disease on one variety and thus spreading it to other varieties being grown and handled by the same equipment and containers was especially alarming this season, when seed stocks, reliable or otherwise, were scarce. As a result, in order to fill out their acreage, many growers shopped around for seed or used seed known to be infected with ringrot, with the idea of disposing of such stock at harvest time and not carrying it over for seed stocks the following year. Growers were warned that this was a potential danger to clean stocks that may be handled with the same equipment. In other cases, small amounts of ringrot-infected tubers of early varieties, such as Triumph and Cobbler, were brought in for the grower's own use in the garden, thus endangering later varieties regularly grown in larger acreages for the seed or table market.

It was found that the danger of introducing ringrot by means of borrowed or loaned equipment is easily overlooked or ignored. Growers were warned that equipment used in digging, storing, grading, cutting, planting, harvesting, and other operations should be disinfected before using if loaned or borrowed. Cuts or bruises of any kind occurring from the time of digging until the time of planting the next season may function

as good avenues of entry for the ringrot bacteria, so that care must be exercised in all operations. Growers were cautioned that when bacterial ringrot is present in a seed stock, even in small amounts, the cutting knife is a very potent means of building up infection in the resulting crop. The use of several cutting knives, and disinfection following a cut through any affected or suspected tubers, were advised as routine procedure. The care necessary to safeguard against ringrot may necessitate the formation of some new habits; however, when such habits are formed they will prove to be no more difficult to carry out than the old ones, and the effort will be well repaid.

Growers were cautioned not to rely upon seed treatment, which is not effective for ringrot control.

As last year, ringrot was found in all varieties examined. Table 2 gives a comparison of the incidence of the disease according to the varieties examined for these 2 years, 1944 (1943 crop) and 1945 (1944 crop).

Of 82 infected stocks examined in 1944, Katahdin and Chippewa lead in about equal number (28.1%), followed by Cobbler (18.3%), Sebago (11%), Rural New Yorker (8.6%), Triumph (3.6%), and Russet Rural (2.4%).

In the 1945 survey, ringrot was found in Chippewa in more cases (29.1%) than in any other variety, followed by Katahdin (19.4%), Sebago (15.7%), Cobbler (11.2%), Russet Rural and Rural New Yorker (each 9.7%), and least in Triumph (5.2%). All varieties appear to be equally susceptible and the chances for infection are largely dependent upon the care with which they have been handled with respect to possible sources of inoculum.

All growers, whether ringrot was found to be present in their stocks or not, were warned to be alert to the danger from the disease and to familiarize themselves with symptoms and possible avenues of introduction into their stocks, in order to protect themselves. They were cautioned to be very critical of all seed sources, and advised to dispose at once of all seed stocks known to have ringrot for table stock or other uses, and never to sell it, or use it themselves, for seed. Little improvement can be expected regarding the incidence of ringrot until growers discontinue passing the disease back and forth among their unsuspecting neighbors. Many cases were found in which growers disposed of their own infected stock only to replace it unknowingly with equally infected seed stock.

Equally important with the securing of disease-free seed potatoes is the prevention of its contamination. Without very thorough clean-up and disinfection of equipment and storage space before bringing the disease-free seed stock onto the premises it may readily become contaminated with costly results

Late Blight. As in the preceding year, late blight appears to have been well controlled in Langlade County by spraying in 1944 also. Of 426 seed stocks of all varieties examined, only 37 lots or about 8.7% were recorded as having late blight in the bin. Late blight was evident in from only a trace to a very slight amount, with the exception of one lot of Katahdin and one of Rural New Yorker in Rolling Township and one lot of Katahdin in Ackley Township, in which a higher percentage of infection was found. The disease was strikingly more general and more severe in lots examined in these townships than elsewhere in the County. No late blight was observed in lots of Red Warba, Triumph, Pontiac, and Sequoia examined.

At the time of the survey it was too early in this area to find

growth on potato cull piles.

Table 3. Incidence of late blight in seed stocks of potatoes in the Langlade County, Wisconsin, area. April-May 1945

County Township	Total number lots inspected	Lots showing late blight: Number	Lots showing late blight: Percent	Varieties found infected
Langlade				
Ackley	60	14	23.3	Cobbler, Chippewa, Katahdin, Rural New Yorker, Russet Rural, Sebago
Ainsworth	8	0	0	None
Antigo	73	1	1.3	Chippewa
Elcho	8	1	12.5	Sebago
Langlade	21	0	0	None
Neva	51	3	5.8	Chippewa, Sebago
Norwood	10	2	20.0	Chippewa, Katahdin
Peck	18	0	0	None
Polar	29	0	0	None
Price	48	1	2.0	Sebago
Rolling	50	13	26.0	Cobbler, Chippewa, Katahdin, Rural New Yorker, Russet Rural, Sebago
Wolf River	26	0	0	None
Marathon				
Harrison	24	2	8.3	Chippewa, Rural New Yorker
Totals and average	426	37	8.7	6 varieties

Scab. The omnipresent scab [Actinomyces scabies] disease was observed in from a trace to moderate amounts in seed stocks examined. In Neva Township one lot of Chippewa, and in Ackley Township one of Katahdin, showed rather severe scab infection. Scab was again less severe in this county than in the preceding year.

Early Blight Tuber Rot. Early blight [Alternaria solani] infection on tubers was not uncommonly observed on Cobbler in Langlade County, especially in Antigo, Neva, Price, Wolf River, and Polar Townships. It was found also on Triumph in Ainsworth Township, on Chippewa in Neva, Polar, and Wolf River Townships, and on Katahdin in Polar Township. Although it was observed in about 6% of the seed lots examined, in from a trace to moderate amounts, no case was as severe as in one lot examined in Neva Township last year.

Rhizoctonia [solani]. As last year black scurf on tubers was found commonly in from a trace to moderate amounts. The various potato seed treatments commonly employed in the county control this seed-borne infection; however, if environmental conditions favor the fungus and hamper the early emergence of the young potato plants, soil-borne infection may cause damage to the crop.

Blackleg. Very few cases of blackleg [Erwinia phytophthora] were observed on tubers inspected.

Storage Rots. Various storage rots entering through mechanical cuts or bruises, or late blight, scab, or blackleg lesions, were commonly ob-

served in from a trace to moderate amounts. Growers were cautioned that storage rot may be kept to a minimum by care in diminishing the number of such points of entry.

Spindle Tuber. Only a trace of or very little spindle tuber [virus] was observed in the seed stocks examined during this survey.

Hair Sprout. In those stocks in which sprouting had taken place, hair sprout commonly occurred in from a trace to slight amounts. It was most commonly found on Chippewa, followed in diminishing order by Triumph, Cobbler, Sebago, Russet Rural, and Rural New Yorker. In 2 lots of Chippewa, and 2 of Triumph, hair sprout was found in severe amounts, from 12 to 40%. As a rule tubers with hair sprout were firm and frequently appeared to have initiated sprouting slightly ahead of normal sprouting. In some cases normal sprouts might appear on one end of the tuber and spindling sprouts on the remaining portion. Small secondary tubers frequently might form on these spindling sprouts. Growers were advised to eliminate such tubers from their seed stock at cutting time, and if sprouting had not started, to spread tubers out to start sprouting before planting in order to cull out any spindle or hair sprout that might be present.

Miscellaneous. Fusarium stem-end discoloration was observed in traces in a few stocks examined.

Slight loss from freezing was not uncommonly found, especially, in small storage cellars, under windows, against concrete walls or near doors.

Field frost was encountered in a few cases. The frosted area was invaded by a storage rot organism.

Low temperature browning resulting in a mahogany internal discoloration from long-time exposure to low temperatures (not freezing) was observed, especially in Chippewa, in small amounts in several cases. It did not appear in sufficient severity to prevent the use of the tubers for planting. It did not seem to be as common as last year in this area. Growers were warned that in the storage of Chippewa, Katahdin, and Sebago, special care must be exercised with respect to too low temperatures.

Very little internal necrosis, black heart, or hollow heart were encountered.

Mechanical injury, from digger cuts and bruises from other equipment in handling, was commonly observed in greater or less degree at most locations, depending upon circumstances and care in handling.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

DISEASES AND INJURIES OF GREENHOUSE-GROWN VEGETABLE PLANTS IN NEW YORK

Robert C. Cassell

Two days, May 16 and 17, were spent at greenhouses in the Albany-Schenectady area, examining vegetable plants produced under glass for transplanting to the field. Transplanting had only begun. Occasional fields of tomatoes were out and some celery had been transplanted. Fields of celery put out before the 5-inch snow of May 10 look very yellow and sickly. Most growers are expecting to reset such fields. The cabbage is

mostly out. Pepper transplanting has hardly started. Plants in the greenhouses are well advanced in growth and should have been out before this if the weather had permitted. Plants in cold-frames have responded very poorly to the cold wet weather of the last 6 weeks and show unmistakable signs of nitrogen deficiency.

The following report on greenhouse crops is based on information gathered from 14 operators.

Tomato. Thirteen of the 14 operators grew tomatoes. Five of the 13 used sterilized soil and also some method of seed treatment. One other grower who did not use sterilized soil used the seed treatment of hot water and blue vitriol dip.

Plants of 6 growers who had used this seed treatment method showed no damping-off, leaf spot, or other noticeable troubles. At 4 of 6 places where no seed treatment was used no obvious trouble occurred, but at the other 2 a trace of early blight leaf spot (Alternaria solani), with some stem canker, was noted. Another grower had used only the Arasan dust treatment; there was some root rot here but apparently not enough to cause plant death. At another place where an undetermined seed treatment had been used, a trace of Alternaria leaf spot occurred.

Tomato plants produced in hot beds, and those set in the field prior to the May 10 snow, were showing considerable leaf and stem spotting due to adverse weather conditions. Plants grown from the same seed in greenhouses were not subject to this weather spotting.

In one house visited both tomatoes and flowers were grown. A disease present in the tomatoes had also appeared on the fall tomato crop, killing about 1/3 of it. It is thought that the disease may be spotted wilt (virus).

In one house of mature Vetomold 121 tomatoes a trace of leaf mold (Cladosporium fulvum) was present; some leaves showed 30% coverage.

Pepper. Ten of the 14 operators produced peppers. Only 4 of the 10 used sterilized soil and 5 used some sort of seed treatment. Three of the 10 used both sterilized soil and seed treatment. However, the seed treatments used were not those recommended by the Station for the diseases involved so no attempt is made to correlate treatments with disease incidence.

Damping-off was present in 7 of the 10 places; more occurred on peppers than on any other greenhouse crop seen. At 4 places it was present in amounts from a trace to 2%; at the other 3 places it was affecting 15 to 40% of the plants with no less than 5% already dead. At one of these latter places some plants had been transplanted to a large cold-frame with unsterilized soil; this bed was 100% affected and most of the plants were lost.

Bacterial leaf spot (Xanthomonas vesicatoria) was present at 5 of the 10 locations. Only a trace was noted in 4 cases, but from 8 to 10% of the plants were lightly affected in the fifth.

Eggplant. Eggplants were grown at 5 of the 14 locations. Soil sterilization was practiced at 3 places; no damping-off existed in 2 of these but it caused loss of about 1/3 of the plants at the third place where sterilizing was poorly done. Only a trace occurred at one of the 2 places using unsterilized soil. Three of the 5 growers used seed treatment. At one place where the grower had neither sterilized the soil nor treated his seed, about 3% leaf spot (Alternaria solani) was noted.

Cucurbits. Two cucumber growers were found who had not used sterilized soil; damping-off was present in both cases. Only a trace occurred at one place but about 10% loss of plants resulted at the other. Two other growers who had sterilized their soil experienced no trouble. No other diseases were found. Three of the 4 growers had used seed treatment.

Two greenhouses were seen where cantaloups were grown. One grower did not use sterilized soil but treated his seed, part with red copper oxide and part with Arasan, neither of which is recommended by the Station. About 10% damping-off occurred in plants from the Arasan-treated seed and 25% in those from red copper oxide treatment. The other grower used sterilized soil but no seed treatment. His plants showed about 5% mosaic (virus) and 1% leaf blight (Alternaria cucumerina).

Squash seedlings were found at 2 locations. One grower had used sterilized soil and treated the seed; his plants showed no disease. The other grower had taken no precautionary measures; as a result 100% damping-off occurred in the beds. About 30% of the plants had recovered, however, by secondary rooting.

Other Plants. Two growers were encountered who still had cabbage plants in the greenhouses. No disease was found in either case. One grower had used sterilized soil and seed treatment; the other just seed treatment.

Celery was found at 4 locations. In no case was the soil sterilized and in only one case was the seed treated. Seedlings appeared to be free from disease in all cases.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

ANSATOSPORA ACERINA FOUND CAUSING DECAY OF STORED CARROTS IN WAYNE COUNTY, NEW YORK

Wm. E. Rader

Ansatospora acerina (Hart.) Hansen & Tompkins was found causing decay of carrots in 6 storage houses in Wayne County. Isolations from roots collected during the winter and spring of 1945 from 20 storage plants in 5 counties in upstate New York have shown the known occurrence of this pathogen on carrots to be limited to the one county. It is not surprising that A. acerina has been found on carrot, since it is particularly prevalent on stored celery in Wayne County and was found by Newhall (Phytopath. 34: 99, 1944) to produce decay when inoculated into carrots. However, this is the first time that this organism has been found causing decay of stored carrots in New York.

The black lesions caused by this fungus were found on either the crown or the sides of the roots. The external appearance of these lesions was indistinguishable from those produced by the black rot fungus, Alternaria radicina. In cross section the rot produced by Ansatospora acerina is black except the advancing margin which is brown in color and usually has a watersoaked appearance, in contrast to the discrete black margins of the black rot lesions. The characteristic brown color of the advancing margin of the root lesions has been the only means of distinguishing the Ansatospora rot from the black rot of carrots.

CORNELL UNIVERSITY

DISEASES REPORTED ON VEGETABLE CROPS

Reports are of Emergency Plant Disease Prevention Project surveys.

DISEASES OF CUCURBITS IN SOUTHERN LOUISIANA: A large acreage of cucumbers, squash, and cantaloups, is grown below New Orleans as far as Buras. There has been a rather severe outbreak of downy mildew (Pseudoperonospora cubensis) in this area. Considerable damage was done in some fields. The disease was first observed the week of April 16, but no conidia could be found then to confirm identification. It was of interest to note, this time, that extremely few cucumber leaves were found on which sporulation had occurred. Powdery mildew (Erysiphe cichoracearum) was getting a good start in a few fields of patty pan squash between New Orleans and Pointe a la Hache.--Douglas C. Bain, May 14-19

BULB NEMATODE ON GARLIC IN CALIFORNIA: Ditylenchus dipsaci was present on a trace of the plants in one field in the Salinas Valley.--Henry Schneider, May 7-12

DISEASES OF LETTUCE AND CABBAGE IN NEW JERSEY: Report of tenth visit to Northern New Jersey vegetable growers, May 23 to 24. This trip was made in the company of Mr. C. H. Nissley, Extension Specialist in Vegetable Growing, New Jersey Agricultural Experiment Station.

Gray mold (Botrytis sp.) has continued and is now present on all farms. The loss in Romaine lettuce at Farm 11 now amounts to about 30%.

Drop (Sclerotinia sclerotiorum) is now present in field-grown lettuce on all lettuce-growing farms. Losses to date are in the neighborhood of 5% on most farms but amount to 10% or more on 2 farms, Farm 3 and Farm 4. At Farm 17 in a field of Romaine lettuce nearly ready for harvest the loss is at least 15% and the disease appears to be spreading rapidly. At Farm 15 where drop was first seen, appearing in frame-grown Boston, loss has been severe (20 to 25%) in frame-grown Romaine and Iceberg.

Mosaic (virus) of lettuce is present in all varieties on all farms, with no evidence of increase beyond the amounts previously observed. Greatest prevalence (10 to 15%) is in Boston lettuce at Farm 16, and in Iceberg and Romaine at Farm 11.

Aphids are present in a few lettuce fields and leafhoppers in a few more.

The earliest plantings of lettuce have been harvested and cutting is continuing.

Wire-stem (Rhizoctonia sp.) of young field-sown cabbage seedlings is present in very slight amount at Farm 8. The growers report Rhizoctonia-attack on all crops grown on this particular field in previous years.--A. J. Mix.

SPOTTED WILT ON LETTUCE IN THE SALINAS VALLEY OF CALIFORNIA: During the second week in May several severely affected fields were observed, containing 15, 30, and 80% of diseased plants. Traces were observed earlier in 2 of these fields, in the last week of March.

Slight amounts of downy mildew (Bremia lactucae) were present on older leaves of mature plants.--Henry Schneider, May 7-12

NECK ROT OF STORED ONIONS IN CALIFORNIA: Onions grown in the Salinas

Valley, held in common storage for 6 weeks, and then transferred to cold storage, were suffering considerable damage from neck rot (Botrytis sp.). One lot of 600 sacks contained 30% of onions with external signs of rotting. Another lot contained about 12% of Botrytis-rotted onions. Two other lots contained 5 and 10% of various kinds of rots.--Henry Schneider, May 7-12

OCCURRENCE OF PEA ROOT ROT ON THE LOWER EASTERN SHORE OF MARYLAND, AND IN DELAWARE: Following the observations reported earlier (PDR, May 22, p. 446) of the early occurrence of pea root rot (Aphanomyces euteiches) in Maryland, pea fields were visited in the area between Milford, Delaware, and Snow Hill, Maryland, May 15 to 18. Twenty-four fields were visited, containing an estimated 300 acres. In 10 of these fields (125 acres, vicinities of Whiton, Maryland, Ellendale, Harbison, Thompsonville, and Milford, Delaware) no root rot was found. In 10 fields (120 acres, vicinities of Hebron and Salisbury, Maryland, Ellendale and Milford, Delaware), root rot was present in only trace amounts and was causing no evident damage. Four fields (55 acres, vicinities of Angola and Milton, Delaware) were found in which nearly all the plants were affected by root rot and the loss of stand (dead and dying plants) was estimated on May 17 as between 10 and 15%.

Frost injury (previously reported by J. W. Heuberger, PDR May 1, p. 384) had occurred in all of the fields seen except one between Snow Hill and Whiton, Maryland, this being somewhere near the southern limit of the severe freeze of April 5-6. New shoots (2 or even 3 per plant) had made vigorous growth and each shoot bore 2 to 3 blossoms or young pods, indicating the probability of good yields from frost-injured fields.

Aphids were present in several fields but were not abundant and a few plants affected by mosaic (virus) were found in one field, near Hebron, Maryland. Mosaic was not seen in any other field.--A. J. Mix.

DISEASES ON PEPPER AND TOMATO IN SOUTHERN LOUISIANA: Blight (Phytophthora capsici) is beginning to show up on peppers in the same field where it was found last year, near Pontchatoula (May 1-12).

On tomato, mosaic (virus) has spread considerably since the last report (PDR May 1, p. 381). Whether there will be much effect on yield remains to be seen; however, one grower with 23,000 plants already has had a reduction in yield. Bacterial spotting of fruit (Phytomonas [Xanthomonas] vesicatoria) was noted in a few fields below New Orleans. A severe outbreak of leaf mold (Cladosporium fulvum) was seen in a garden at Houma. Early blight leaf spot (Alternaria solani) was found to be generally distributed on lower leaves in fields below New Orleans (May 14-19).--Douglas C. Bain

DISEASES OF SMALL GRAINS IN MISSOURI

T. W. Bretz

A survey trip, devoted principally to the examination of small grains, was made during the week ending June 2 into the southwestern section of the State. Observations were made on winter wheat, barley, and oats in Lawrence, Newton, Jasper, Barton, Vernon, Bates, Cass, Jackson, and

Lafayette Counties.

Wheat. This crop ranged from the flower to milk stage in development, with an occasional field in the soft dough stage. Leaf rust (Puccinia triticina) [P. rubigo-vera var. tritici] was found in all stands. The prevalence of infection was 100%, with the severity ranging from 5 to 50%. An occasional field showed areas in which the severity was as great as 80%. The average severity for all fields examined was in the neighborhood of 25%.

Speckled leaf blotch (Septoria tritici) infection was evident in practically all fields, but the extent of damage caused by it was obscured by the development of rust. Indications were that only light to moderate infections had occurred.

Loose smut (Ustilago tritici) was found in all but one of the plantings examined. From a trace to 15% of the heads were commonly affected, averaging 6.5% for all fields. One field of a bearded variety showed an excessively heavy smut infection, namely 36.5%.

Glume blotch (Septoria nodorum) was found in 27% of the stands. In most fields only scattered heads were infected, but in one an estimated 15% of the heads showed from one to many infected glumes.

Scab (Gibberella saubinetii) [G. zeae] infection was observed in only 2 fields, causing a trace of damage to date.

A moderately heavy, active powdery mildew (Erysiphe graminis) infection was found in one field situated in a low-lying creek bottom area.

No stem rust (Puccinia graminis) infection has been observed to date.

Oats. Plants ranged from the joint to boot stage of development, with an occasional field in flower.

Crown rust (P. coronata) was found in all stands. In all cases, however, the infection was very light and scattered.

Halo blight (Phytomonas [Pseudomonas] coronafaciens] was found in the majority of fields, ranging from light, scattered infections to situations in which the prevalence of the disease was 100% and the degree of leaf spotting was moderately heavy.

A leaf spot caused by a Helminthosporium sp. (probably H. avenae) was also rather generally prevalent. The extent of this disease ranged from light, scattered infections to instances in which its prevalence appeared to be 100% and the leaf spotting was moderately heavy.

Only 2 fields were observed in flower and in both of these smut infection was evident. In one field 33% of the heads were smutted, with loose smut (Ustilago avenae) being somewhat more prevalent than covered smut (U. levis) [U. kolleri]. The other planting showed 10% of the heads affected with loose smut.

Barley. Only 2 fields of barley, both in the soft to hard dough stage of development, were observed. In each, a Septoria leaf spot (S. passerinii ?) was generally prevalent and responsible for the death of a moderate amount of leaf area. A light, scattered scald (Rhynchosporium secalis) infection was observed in one field. Five percent of the heads in one field showed scab infection. Covered smut (Ustilago hordei) was observed in both stands, affecting 5 and 15% of the heads respectively, and 3% of the heads in one stand showed loose smut (U. nigra or U. nuda) infection.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

CEREAL DISEASES IN NEBRASKA

C. M. Slagg

Wheat Diseases. During the first half of May a total of 119 wheat fields were examined, including for the first observation in 1945 areas in the southwestern and northwestern parts of the State. Orange leaf rust was seen in all areas visited, but was heavy only in the eastern, southeastern, and south-central areas. In the western and north-central sections, infection was in trace amounts only in the Sidney area, light in the upper Platte Valley and in the Sheridan areas. Although infection in general was heavy in Southeastern Nebraska, it showed only a moderate increase during the period.

Speckled leaf blotch was present in all areas visited. Infection was light to moderate at this time in all areas except Southeastern Nebraska, where it was severe. In the 8 southeastern counties a large increase in leaf infections was observed, with many plants showing Septoria lesions spreading to the upper leaves.

During the second half of May, 64 fields in 12 southeastern Nebraska counties were examined; 59 of these were headed. Rainfall had been plentiful to excessive in this area during the past month, but cool weather apparently had been a factor in preventing a great increase in orange leaf rust. The heaviest infections ranged around 50/90 and 40/100 on the rust scale and were found in Gage and Lancaster Counties.

Speckled leaf blotch had increased greatly during the past month. In many fields it could be found even on the flag leaves. Heaviest infections were seen in Gage County.

Take-all foot rot (Ophiobolus graminis) was found in one field in Cass County and in one in Sarpy County. Its attack was confined to scattered spots in both fields, and both were too immature to determine the amount of injury.

Loose smut was present in 45 of the 59 headed fields examined during this period. Losses were greatest in Otoe and Nemaha Counties, averaging 14% for the 15 fields examined in these 2 counties, with one field in Otoe County showing 28%, and one in Nemaha County 26%, loss. For the area covered, the average loss from loose smut was 6.7%. It is of interest to note that 2 varieties, Pawnee and Kawvale, were entirely free from loose smut as observed in this survey; also, that one area, centering at Pawnee City, was found where no more than a trace of loose smut was noted in 8 fields examined.

During the week ending June 9, 101 wheat fields were examined in 13 south-central counties. Black stem rust (Puccinia graminis var. tritici) was found for the first time in 1945 in Nuckolls County, 7 miles east of Guide Rock.

The most damaging wheat disease in the area surveyed was loose smut. Only 3 fields were found free from smut, and these were all of the Pawnee variety. Infection in the rest of the fields examined ranged from 1 to 25%, with an average loss for all fields surveyed during the week of 7.6%.

Orange leaf rust was universally present. Losses from this disease appear to be small, although infection in the southern tier of counties was very heavy, ranging as high as 100/100 in one field, and 50/100 in another, in southern Webster County.

Speckled leaf blotch was found universally present in the area, and causing many lesions, in some fields being present even on the flag

leaves. It was most abundant in Nuckolls County.

Field yellowing of wheat, believed to be caused by some nutritional deficiency, was marked in an area centering in Thayer County and extending for a few miles into adjoining counties on the east and west. It occurred to some extent in all fields, and most of the fields around Hebron were severely yellowed. An examination of the wheat varieties in the regional test plots at Bruning indicated that all varieties were rather uniformly yellowed except Pawnee, which showed little yellowing.

Oat Diseases. A number of fields of spring oats observed in eastern Nebraska during the first part of May showed primary leaf lesions of what appeared to be halo blight.

In 17 fields of oats examined in southeastern Nebraska during the latter part of May, only one disease, diagnosed as halo blight, was seen. It was present in some degree in all fields examined, and many fields were so badly attacked that haloed lesions were present on the upper leaves, and the lower leaves were nearly dead. Most of the fields examined were about half grown, and it may be possible for the plants to outgrow the attack if dry weather ensues, but it seems certain that considerable injury has already been done, and yields on such fields will be reduced.

In South-central Nebraska during the week ending June 9, halo blight was seen in many fields. Two early fields that were headed out were examined closely. Halo blight was moderately severe in both fields, and loose smut caused a loss of 4% in one, none in the other.

Barley Diseases. Two winter barley fields in Phelps County and 2 spring barley fields in Harlan and Webster Counties were examined during the first week in June. Covered smut caused losses of 24 and 11% in the 2 winter barley fields, while loose smut caused losses of 2 and 1%, respectively, in the same fields.

In the 2 spring barley fields, loose smut caused losses of 8 and 19%. Many other barley fields were seen which were not yet headed. It is apparent, however, that the smuts will cause serious losses to barley growers this year.

Rye Diseases. Nine rye fields were examined in Central and North-central Nebraska in the first part of May. Orange leaf rust (*Puccinia dispersa*) [*P. rubigo-vera* var. *secalis*] was seen in all fields. Its attack was heavy in one field in Platte County and in one in Merrick County, while other areas showed light to moderate injury.

Speckled leaf blotch (*Septoria secalis*) was found in all fields examined but its attack was light and confined to the lower half of the plants.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

DISEASES OBSERVED ON CEREALS IN KANSAS

Stuart M. Pady

From May 18 to 25 a cereal disease survey was made through 24 of the eastern, southeastern, and central counties of Kansas, particular attention being paid to the diseases on wheat. Dr. Hurley Fellows, patholo-

gist, Division of Cereal Crops and Diseases, accompanied the writer during this survey. The northeastern, north-central, northwestern, western, and central counties were visited during the following week (May28-June 2). This report represents the findings of these 2 surveys which covered most of the important wheat-growing counties in all parts of the State. In all, 174 fields in 53 counties were examined. The following diseases were present.

Wheat. Leaf Rust. Because of the widespread overwintering of leaf rust in Kansas as well as Oklahoma and the epiphytotic forecast by Chester and Larsh (PDR Suppl. 156, Apr. 7, 1945), particular attention was given to this disease. While leaf rust was found in every field examined, the amount present was considerably less than expected in view of the prevalence during the fall and winter. Temperatures throughout the State during January, February, and March were above normal, but in April and May there were extended periods of cool wet weather. As a result leaf rust in the eastern counties around May 20 varied from a trace to 30% on the lower leaves and from 0 to 5% on the upper leaves (USDA scale). In the south-central counties, particularly in Sedgwick, Kingman, and Pratt, the amount of leaf rust is somewhat higher, ranging from a trace to 5% on the top leaves and from 15 to 40% on the lower leaves. Most of the wheat in this area had already headed. In the central counties the amount of leaf rust was slightly less. From Pratt County westward there was a marked reduction with most fields showing only a trace on the lower leaves.

The survey of May 28 to June 2 along the northern and western part of the State gave further evidence of unfavorable conditions, since the amount of leaf rust was small, varying from a trace to 15% on the lower leaves to 0 to 2% on the top. In an occasional rank field the amount reached 2% on the top leaves and 40% on the lower. The central counties, however, showed an increase with many fields now reading up to 40% on the upper leaves and in a few cases to 100%. The average for all leaves is estimated to be about 30%. The majority of the fields were in the early milk stage.

There are thus at the present time 4 areas with respect to leaf rust: the eastern (soft wheat) with rather light infection; the south-central with fairly heavy infection; the north-central with low amounts; the western third in which leaf rust is only a trace. With harvest in the south-central counties only 2 weeks away it would seem to indicate that leaf rust is not likely to cause much damage there. However, in the northern counties and especially in the good wheat area of the northwest corner, there is opportunity for damage provided that there are spore showers and favorable weather conditions.

Speckled Leaf Blotch. This disease was also present through the State but it is difficult this year to assess the damage caused by this fungus. Normally this organism causes infection on the lower leaves during the fall, winter, and spring, usually causing the death of many of them. Because of heavy overwintering of leaf rust on these same leaves it appears that leaf rust and speckled leaf blotch have together been responsible for the death of much of the lower foliage. In making readings of this disease the system devised by Dr. Hurley Fellows was followed: namely, the region involved followed by a percentage estimate of the total leaf area destroyed. In the eastern counties most infections were in the lower half with severity ranging from 1 to 25, averaging about 10%. Through

the central, south-central, and southwestern counties, Septoria was more abundant, often reaching the flag leaves , ranging from 5 to 40, averaging about 20%. In the north and northwest this disease is less, averaging around 5% with occasional fields running higher. In the 2 western tiers of counties it was largely confined to the lower quarter and the severity ranged from a trace to 5%, with one field of 10%, averaging 1%.

Loose Smut. In the southern counties loose smut is present in the majority of fields, ranging in amount from a trace to 10%, but the majority averaging a trace. In fields in the northern half of the State where only the early varieties have headed out, smut is present as a trace in practically all fields. These preliminary surveys would seem to indicate that there is much more loose smut this year.

Take-all (Ophiobolus graminis) was observed in Kiowa, Hodgeman, Ellis, McPherson, Marion, Chase, Ellsworth, Saline, Pawnee, Rush, Barton, Rice, with heavy infestations occurring particularly in the last 4 counties. In the region west of Great Bend take-all seems to be particularly severe, with many fields being 40 to 50% infected. Early Blackhull and Tenmarq were the varieties that were most severely attacked. Fields that were on continuously cropped lands had more take-all than neighboring fields on fallow ground.

Other Diseases. Powdery mildew (Erysiphe graminis) is found on the lower leaves in practically every field where the stand is good and the growth is rank. Black leaf spotting is very common this year in all parts of the State, some of the spots being pin point in size without halos while others are larger with pale centers and distinct halos. In a few cases black streaks are present, probably due to coalescence. Some of the spotting resembles that described for Helminthosporium tritici-vulgaris, yet from isolations made last year by Dr. D. A. Preston and this year by Dr. H. Fellows an Alternaria sp. has been isolated. In some of the material recently sent to Dr. W. W. Ray a species of Heterosporium has been isolated. Bacterial lesions on the flag leaves were found abundantly in 10 fields in 6 widely scattered counties. In one field in Wilson County 70% of the flag leaves were so heavily infected that the leaves were curled. The lesions are narrow, linear, pale yellow, translucent with yellow exudate. The foliar symptoms resemble those described for the black chaff organism; material has been sent in for identification. Anthracnose (Colletotrichum graminicolum) was found sparingly on the old leaf sheaths in one field in Chase County. No stem rust has yet been observed although C. O. Johnston has reported the presence of primary pustules on June 1 in the vicinity of Wichita, and in Southeastern Kansas.

Barley. In winter barley the most serious disease is smut (Ustilago sp.), which was present in all 14 fields examined, varying from a trace to 35%, averaging 10%. Most of these fields were in the western half of the State. Because of the extreme variation found in smutted heads and the resultant difficulty of accurate determination of the smut species, collections have been made and given to Dr. E. Hansing for culture and identification. Leaf rust (Puccinia anomala) was present in 4 fields, in 2 as a trace but in fields in Marion and Rush Counties up to 35%. Bacterial blight (Phytomonas [Xanthomonas] translucens) was noted in one field in Kiowa County. Septoria leaf blotch (Septoria passerinii) was found in 2 fields, in Kiowa and Marion Counties. Powdery mildew was present in varying degrees on most leaves in one field in Douglas

County. Take-all was found in one field in Rice County in the area where take-all on wheat is now prevalent.

Oats. Most of the oats are still jointing but a few have headed. Crown rust was present in practically all fields in small amounts, except in one headed field in Rice County where the rust was 30%. Smut (Ustilago sp.) was 2% in this same field. In one field in Anderson County, Helminthosporium leaf blotch (H. avenae) and anthracnose (Colletotrichum graminicolum) were present in moderate amounts on the lower leaves. Halo blight was noted in 2 fields but was not serious. A trace of stem rust (Puccinia graminis var. avenae) was found in one field, recently headed, in Rice County.

Rye. Leaf rust was present in all of the 6 rye fields examined, varying from a trace to 50%, and is easily the most prevalent disease on this crop. Septoria leaf blotch (S. secalis) was present in trace amounts in 3 fields. Bacterial leaf blight (Phytomonas [Xanthomonas] translucens f. sp. secalis) was found on a majority of the leaves in 2 fields in Pottawatomie and Franklin Counties. A trace of anthracnose was also present in a field in Brown County.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

CEREAL DISEASES IN TEXAS

I. M. Atkins

After an excessively rainy period of 3 months, May was abnormally dry and windy. A total of only 1.00 inch of precipitation was received in 3 small showers. Wind run averaged 9.5 miles per hour for the entire month, which is the highest wind movement ever recorded for May. Humidity for the month was considerably below normal. Temperatures for the month were about normal with a maximum of 93° and a minimum of 39° F. Only 12 dews were recorded. The dry windy weather has continued into June until yesterday, June 10, when rain started and a total of 2.59 inches was received yesterday and last night.

The effect of the above weather conditions was to prevent the rapid spread of rusts during May and to hasten maturity of much of the grain. Leaf rust of wheat reached a maximum about May 10 with moderate damage in the area of Denton and more severe damage farther west in the Rolling Plains area. This damage was so confused and complicated by Septoria and by yellowing of the leaves due to nitrogen deficiency that it is very difficulut to determine the influence of the various factors. Stem rust of wheat appeared about the normal time on May 1, but spread of the disease was very slow and there was no influence on yield in this area (Denton) or farther west in the State. Dr. Salmon, Dr. Quisenberry, and I visited the experiments at Amarillo on June 5 and neither leaf nor stem rust could be found there. Harvest of early strains in the wheat nursery started about May 25. Harvest of Early Blackhull fields in this area also started about that time, although some were cut with the binder as "green as grass." Septoria caused breaking or bending of the culms as they neared maturity and farmers were afraid to leave fields for combine harvesting. The majority of experimental plots were harvested by June 5, though harvest of head rows and bulk hybrids is not

yet complete. Most strains were harvested with no rain from the time they were fully headed to ripening. Yields will be low but quality appears good. Dr. Quisenberry, Dr. Salmon, and I visited the cooperative tests at Iowa Park and Chillicothe on May 30. At both stations yields will be very good and, as at Denton, they matured with very little precipitation. At Iowa Park the coloring of chaff and grain was the most intense I have seen in some time.

Leaf rust and stem rust of oats made more progress in late April and May and did serious damage to many plantings. Oats began breaking down as soon as they ripened and this caused nearly all farmers to either cut with a binder or windrow their oats. A few have cut directly but one gets the impression in traveling around that all oats were cut with the binder. The quality of fall oats is excellent in spite of rust damage. Yields will be extremely variable.

One of the outstanding features of the season is the very fine showing of Austin wheat in comparison with other varieties. Our seed is slightly mixed from segregation or mixtures so that many susceptible plants are present but the general resistance of the field is so outstanding that it will cause one to notice Austin immediately when driving along the road. No fields have been combined yet but yields should reflect this resistance.

DIVISION OF CEREAL CROPS AND DISEASES, June 11

CEREAL DISEASES OBSERVED IN SOUTHERN ARIZONA DURING 1945

Wm. G. Hoyman

A survey of cereal diseases in the Southern Arizona counties of Maricopa, Yuma, Graham, Greenlee, Pima, and Pinal was conducted at various times between March 16 and June 1, 1945. As in previous years, barley continued to be the most widely-planted small grain. The varieties Arivat and Vaughn are extensively grown. In a previous report (PDR 28: 506-507. 1944) for 1944 it was indicated that cereal diseases were of little importance for that year. During the present season less loss was observed than during 1944. Information given in Table 1 indicates that Ustilago hordei, causing covered smut, was the most common pathogen on barley but was causing less than 1% infection in all instances except one. Other diseases of barley that were of minor importance were caused by U. nuda, Xanthomonas translucens f. sp. cerealis, and the nonparasitic brown spot. Of 100 barley fields surveyed, 54 were free from diseases.

U. tritici causing loose smut was the only pathogen observed on wheat; it was causing less than 1% loss. Puccinia graminis var. tritici, black stem rust, was present in one 10-acre field in the Yuma Valley during 1944. In 1945 it was not observed at Yuma during the month (March) the survey was made. Dr. A. T. Bartel, assistant agronomist, U.S. Department of Agriculture, and Dr. R. L. Matlock, extension agronomist, University of Arizona, informed the writer that they observed rust on wheat in one planting at Yuma during the forepart of May 1945. It is of interest to note that rusted wheat occurred at Yuma during 1944 and 1945, but was never present in the Salt River Valley, Maricopa County. Dr. J. G. Brown, Department of Plant Pathology, University of Arizona, has indicated that it has been his experience the past several years that in

Table 1. Cereal diseases observed in six Southern Arizona counties during 1945

County	Fields observed		Fields without disease		Fields with disease			
Crop	Number	Acreage	Number	Acreage	Diseases present	Fields affected: Number	Acreage	Infection %
Maricopa								
Barley	82[a]	6628	46	3958	Covered smut (Ustilago hordei)	22	1645	-1[b]
						1	60	1
					Loose smut (U. nuda)	6	420	-1
					Bacterial blight (Xanthomonas translucens f. sp. cerealis)	1	80	-1
					Brown spot (non-parasitic)	7	545	VS[c]
Wheat	12	745	9	545	Loose smut (U. tritici)	3	200	-1
Oats	19	1159	1	7	Covered smut (U. kolleri)	7	532	-1
					Loose smut (U. avenae)	6	282	-1
					Blast	8	382	VS
						2	140	S
Yuma								
Barley	8	645	4	116	Covered smut	4	529	-1
Wheat	3	46	3	46				
Graham								
Barley	7	415	2	180	Covered smut	5	235	-1
					Loose smut	1	70	-1
Wheat	4	210	3	130	Loose smut	1	80	-1
Oats	1	6	0		Covered smut	1	6	1
					Loose smut	1	6	1
					Blast	1	6	VS
Greenlee								
Barley	1	8	1	8				
Wheat	1	7	1	7				
Oats	1	6	1	6				
Pima								
Barley	1	40	1	40				
Pinal								
Barley	1	80	0		Covered smut	1	80	-1

Footnotes on opposite page

Footnotes to Table 1

[a]The total acreage and number of fields observed may be less than the sum of the totals shown under the various disease and no-disease columns because 2 or more diseases may occur in the same planting.

[b]Less than 1%

[c]VS = very slight; S = slight

some years wheat rust has sometimes occurred at Yuma but not at Phoenix and vicinity in the Salt River Valley.

The only diseases observed on the small acreage of oats were Ustilago levis [U. kolleri] and U. avenae, causing covered and loose smut, and blast. As indicated in the table, these were of minor importance. In a nearby State (Texas) Altstatt (PDR 29: 354. 1945) has recently reported the presence of crown rust of oats in the Coastal Bend region. Watson's (PDR 29: 355-356. 1945) recent report indicates that stem rust and crown rust of oats were present in the Winter Haven region of Texas. Neither of these 2 rusts have been observed in Arizona since the inception of the Emergency Plant Disease Prevention Project.

In addition to the above-mentioned diseases, it is possible that certain soil-borne fungi parasitize the roots of cereals. Most of the survey was made at the time heading commenced or afterward, and therefore little attention was given to seedlings.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

A NEW CORN DISEASE IN THE RIO GRANDE VALLEY

George E. Altstatt

What appears to be a new corn disease for Texas, possibly of virus nature, has recently been found in the Lower Rio Grande Valley. While examining plants in a sweet corn variety test with Dr. B. S. Pickett, Horticulturist of the Weslaco Experiment Station, on May 15, a few plants were noted to be abnormal in development. Dr. I. E. Melhus, head of the Department of Botany and Plant Pathology of Iowa State College, found plants similarly affected in the cooperative breeding block at the same Station a few days later. Mr. E. V. Walter, Entomologist with the Division of Cereal and Forage Insects, of the Bureau of Entomology and Plant Quarantine, U.S. Department of Agriculture, had observed the same disorder in his corn breeding blocks about one mile south of the Weslaco Station, where it was very common among the different kinds of sweet corn. Mr. Walter had also observed this condition in a few instances in his 1944 plantings. Examination of a nearby commercial field indicated that this condition in corn may be more widespread than previously thought, and a survey was undertaken to determine its extent in the Valley, with the cooperation of Mr. Walter, Dr. Pickett, and Dr. G. H. Godfrey, Plant Pathologist at the Weslaco Station.

It was found that the disease was widely scattered throughout the Valley, and particularly prevalent in the Weslaco-Donna area. It was more common in sweet corn and pop corn than in field corn. The percentage of plants affected in commercial fields varied from none to 30. It seemed that early-planted suffered less than late-planted fields, in that some marketable ears were harvested from affected plants in the early-planted

fields. In one late field of the Ioana variety with 30% of the plants severely affected, it appeared that the loss in marketable ears would be close to 30%, as few marketable ears would be developed on affected plants.

Toward the northern limits of the Valley, incidence appeared to be less, and subsequent inspection of fields outside the Valley at various points (Robstown, Beeville, Yoakum, LaGrange, College Station) indicated that this disease is probably limited to the Lower Valley areas.

Among the various types of corn that have been found infected are --

Field corn: 7-W, Yellow Tuxpan, White Tuxpan, White Thomas, and Mesquitelania.
Sweet corn: Ioana, Golden Hybrid #10, Aristogold Bantam #2, Golden Hybrid #2439 and 36122xI45
Pop corn: South American and Purdue South American Hybrid.

Infection is readily detected in fields of immature plants by the stunted, bushy appearance of affected plants and their chlorotic, green and white striped leaves which also show conspicuous broad bands of bronze or red color extending the length of the leaf.

The most consistent symptom, however, is the production of an ear shoot from each of the lower nodes. These shoots are elongated, often with as many as 5 nodes, and may produce 2 or 3 vestigial or poorly developed ears.

Where infection apparently has occurred early in the life of the plant, the internodes of the main stalk are much shortened, resulting in a dwarfed plant. Plants may have normal internodal length in the lower portion and shortened internodes in the upper portion, indicating late infection.

Some of the affected plants may produce a normal, full ear, but the later ears may be incompletely formed, with poorly filled kernels. Many ears on these plants are nubbins. In some instances, the silk may fail to emerge, and the tips of the husks become dry. In sweet corn, particularly, the flag leaves (on the ears) are much longer in proportion to the length of the ear, and usually narrower than those on healthy ears. The angle between these leaves and the ear is also wider.

No changes in the internal structure of the stalk have been noted. There is no indication of internal breakdown, cavities, or discoloration. The basal tip of the stalk sometimes shows evidence of necrosis, but this condition is often found in otherwise normal plants.

In most cases the roots are sound. In a few instances there has been evidence of meadow nematode damage, but other plants adjacent to the affected plant may also show nematode infection in the roots without the virus-like symptoms appearing in the top of the plant.

The tassels are generally shorter, and the branches are grouped closely. The floral parts of the tassel appear to be normal.

In sweet corn and pop corn, chlorosis is generally more pronounced than in field corn. The leaves and husks are also lighter green, often with light green to white stripes with a definite mosaic pattern. The larger leaves and the husk leaves show broad streaks of bronze color, which later become red. As the plants reach maturity the red color tends to become much less conspicuous.

Work is under way to ascertain the exact nature of this corn disease.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

ANTHRACNOSE OF SYCAMORE AND OAK IN ILLINOIS

J. C. Carter

Anthracnose (Gnomonia veneta) of sycamore [Platanus] is unusually widespread and severe in Illinois this year. The disease has appeared, for the most part, as bud blight and as a twig and branch infection resulting in cankers and dieback. There has been relatively little of the familiar leaf blight phase. Killing of last year's twigs has resulted in such poor leaf production this year that sycamores now stand out conspicuously in the landscape because of their lack of leaves. Killing of numerous twigs and branchlets, especially on the lower half to two-thirds of the trees, will greatly retard the production of foliage this year and may severely weaken the trees. The abundance of cankers and dead branchlets in which the fungus can live over until next year will be favorable for the production of spores in unlimited numbers in 1946.

Weather conditions during March and April of this year were favorable for infection and the development of the disease. Buds opened and leaves began to unfold several weeks earlier than usual because of unusually high temperatures from March 14 to April 13. Low temperatures and an abundance of rain during the remainder of April and early May held back leaf growth and was favorable for the development of anthracnose.

In our testing of fungicides since 1943, using dormant and summer sprays, we have failed to prevent the development of anthracnose cankers and dieback on sycamores. The fungicides tested were Elgetol and Puratized N5-E as dormant sprays and Bordeaux mixture, yellow cuprocide, Elgetol, Fermate + lime, and Dithane + zinc sulfate as summer sprays.

Numbers of reports are also being received of damage being caused to white oaks by anthracnose. However, these reports indicate that the damage on oaks is much less severe than that on sycamores.

SECTION OF APPLIED BOTANY AND PLANT PATHOLOGY, ILLINOIS STATE NATURAL HISTORY SURVEY, URBANA. June 5

OTHER REPORTS ON SYCAMORE ANTHRACNOSE

PENNSYLVANIA: Anthracnose is widespread throughout Southeastern Pennsylvania, and is causing severe defoliation of practically all trees.--Robert C. Cassell, Emergency Plant Disease Prevention Project. May 7-12

MISSOURI: Anthracnose is prevalent in all sections of the State. It has been responsible for extensive leaf-blighting and defoliation, which may be damaging to many of the affected trees.--T. W. Bretz, Emergency Plant Disease Prevention Project. May report.

THREE PHYTOPHTHORA DISEASES OBSERVED IN THE REGION OF TINGO MARIA, PERU

Bowen S. Crandall

The long rainy season experienced in the montaña of Peru creates conditions favorable for the development of diseases induced by members of the genus Phytophthora. During the past year at Tingo Maria, 3 diseases caused by members of this genus have been encountered. While known from other parts of the Americas, these have apparently not been reported from Peru.

Avocados (Persea americana), both semi-mature and seedling trees, have been observed showing decline and death due to root and collar rot. The cases,, thus far observed, have been on heavy or poorly drained soils. Isolations from typical material have yielded a strain of Phytophthora cinnamomi Rands, which appears indistinguishable from Rands' original isolates or those from chestnut and other forest tree hosts in the Southern United States.

Cacao pods (Theobroma cacao), brought to the laboratory, showed numerous spots of decay. Tissue isolations and damp chambered material yielded isolations of Phytophthora palmivora Butler. Abundant sporangia production occurred on the host. Sporangia were prominently papillate and averaged 46.5 x 33.7 μ.

Tomato plants (Lycopersicon esculentum), in experimental plots at the Estacion Experimental Agricola de Tingo Maria, have suffered the loss of an occasional plant from stem canker. At the time of wilting such plants usually are girdled near the soil line with the elongated canker extending 5 or 6 inches up the stem. Isolations of Phytophthora cactorum (Leb. & Cohn) Schroet. have been consistently obtained from such cankered material.

ESTACION EXPERIMENTAL AGRICOLA DE TINGO MARIA, TINGO MARIA, PERU

NURSERY ROOT AND COLLAR ROT OF CINCHONA AND ROOT ROT OF CANAVALIA CAUSED BY SCLEROTIUM ROLFSII

Bowen S. Crandall

Shortly after the onset of the current wet season isolated patches, a foot or less in diameter, of dying Ledger type Cinchona officinalis L. transplants were observed in the nursery. Dying patches were infrequent and scattered, and the consistent association of a cluster of dead or dying seedlings, surrounded by healthy ones, was in striking contrast to the appearance of transplants killed by dieback or root rot (Phytophthora spp.), where the loss is usually widespread in certain areas in the beds. Isolation from the diseased collar tissue yielded a Sclerotium sp., apparently S. rolfsii Sacc. Later, close examination of the soil in the areas containing diseased trees showed abundant production of the sclerotia of the fungus. In so far as the writer can determine Cinchona has not been reported previously, either in this hemisphere or elsewhere, as being attacked by Southern blight caused by S. rolfsii. In this instance at least, eradication of diseased and adjacent healthy trees and a portion of the bed surface seems to have checked the spread of the disease.

Occasional to heavy losses from Southern blight of beans, peanuts, and squash have occurred in plantings of these crops. Seedlings and an occasional mature plant of Canavalia sp. (probably C. amazonia Piper) have also been observed dying from attack by S. rolfsii when planted in areas where this disease is prevalent.

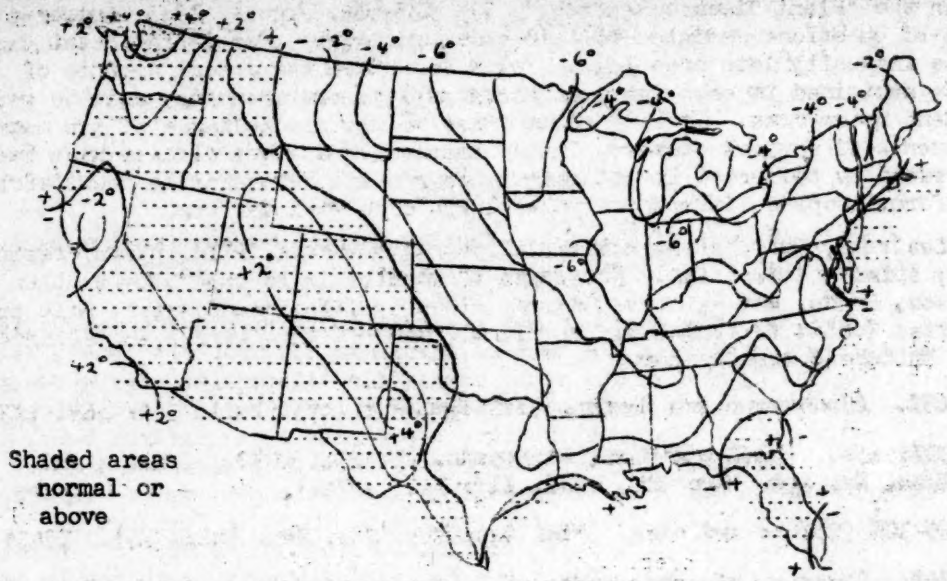
ESTACION EXPERIMENTAL AGRICOLA DE TINGO MARIA, TINGO MARIA, PERU

MAY WEATHER

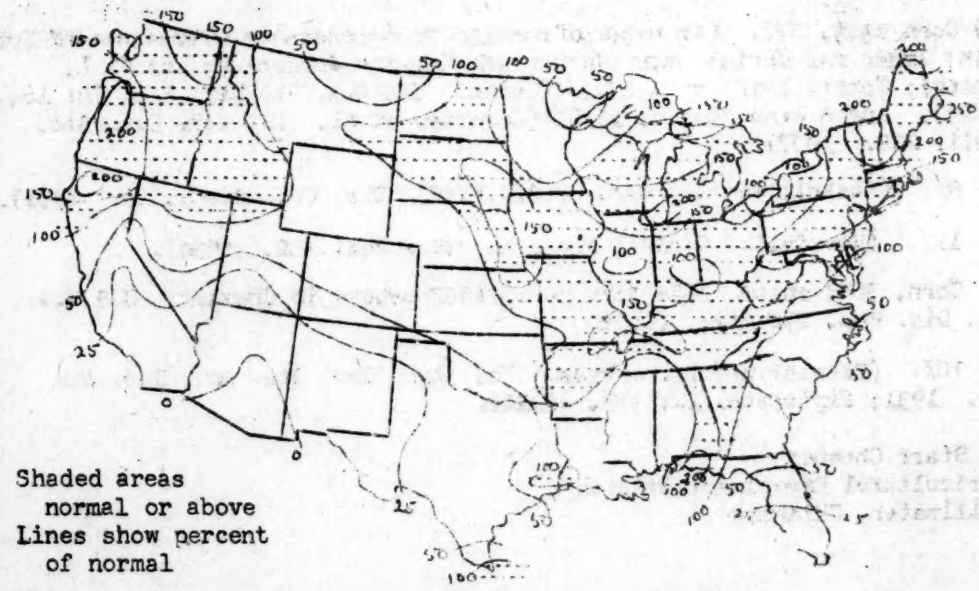
(From U.S. Department of Commerce, Weather Bureau, Weekly Weather and Crop Bulletin for week ending June 5, 1945)

Map I shows that the month of May averaged below normal over practically the entire region from the western Plains to the Atlantic coast, except in the far Southeast and along the middle Atlantic and Texas coasts. Temperatures were below their usual values in north-central and west-central California. The greater minus departures were centered over eastern North Dakota and western Minnesota where they amounted to 7°. The warmer-than-normal area extended from the Mexican border to the Pacific Northwest, with plus departures ranging up to 5° in Washington.

Map II shows that precipitation continued heavy during May in central and northeastern sections, and in the Pacific Northwest, with totals exceeding twice their usual values in parts of the Lake region, New England, Oregon, and extreme northern California. Amounts were mostly below normal in the South Atlantic and Gulf coastal plains and especially from Montana southward over practically the entire Southwest. Central and southern Florida and an extensive area in the Southwest had less than 10 percent.



Map I. Departure of mean temperature from normal, for May 1945



Map II. Percentage of normal precipitation, for May 1945

ANSWERS TO "HOW ACCURATELY ARE WE ESTIMATING PLANT DISEASE LOSSES?"

In the "Plant Disease Reporter", 29: 503-504, June 1, 1945, appeared a set of questions designed to test our accuracy in translating plant disease intensity into crop loss. Below are given the actual amounts of loss sustained in each case, as based on loss measurements, and the pertinent references. In some cases these values are averages of the measurements of several workers. Where losses for a given disease have been measured by different investigators the results have usually been fairly uniform, despite differences in ecology, crop variety, etc.

a) Leafroll, 56%; latent mosaic, 22.5%; mild mosaic, 24%; rugose mosaic, 54%; spindle tuber, 43%. (Averages of results in 16 papers by Schultz, Folsom, Bonde, and Raleigh; Eddins; Gilbert; McKay and Dykstra; Bald and Norris; Scott; K. M. Smith; Tuthill and Decker; Kirkpatrick and Blodgett; and Whitehead and Currier.)

b) 43%. (Heuberger and Norton. Md. Agr. Exp. Sta. Bull. 345: 447. 1933)

c) 30%; 45%. (Wolf and Moss, Phytopath. 23: 834, 1933. Johnson and Valleau, Ky. Agr. Exp. Sta. Bull. 415: 111, 1941)

d) 25-30% (Walker and Hare. Wis. Agr. Exp. Sta. Res. Bull. 145. 1943)

e) 34%. (Average of experiments of Johnston and Miller; Mains; Caldwell, Kraybill, Sullivan, and Compton; Kiesselbach; Roebuck and Brown; Pal; Rudorf, Job, and Rosenstiel; Eidelman; Brizgalova; Rusakov; Shevchenko; and Telichko and Siryachenko).

f) Corn smut, 32%. (Average of results in 6 papers by Hitchcock and Norton; Immer and Christensen; Garber and Hoover; Jorgenson; and F. L. Smith); Tomato leaf spot, 27.5% (Brown. U.S.D.A. Pl. Dis. Rep. 13: 164. 1929). Sugar cane mosaic, 15.6% (Edgerton et al. La. Agr. Exp. Sta. Bull. 288. 1937).

g) 8%. (Haskell and Boerner. U.S.D.A. Pl. Dis. Rep. Suppl. 79. 1931).

h) 11%. (Horsfall. Cornell Agr. Exp. Sta. Mem. 130. 1930).

i) Corn, 30%; onion, 34%; flax 30%. (References in Chester. U.S.D.A. Pl. Dis. Rep. 29: 162. 1945).

j) 10%. (Ezekiel and Taubenhaus. Tex. Agr. Exp. Sta. Ann. Rep. 44: 66. 1931; Phytopath. 22: 988. 1932).

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